lowed by a recurrence treated afterwards with radium without good results. I want to compliment Dr. Maxwell on her paper because I consider it of very great importance. Personally, I have gotten to the point where I don't operate on cancer of the cervix anymore. I refer them all to my radiological friends and I believe that radium, compared to the experience that I have had, with surgery and the use of Dr. Percy's Cautery, is to be preferred. When it comes to cancer of the fundus, I believe that surgery is the method of preference followed afterwards by either radium or deep penetration from the high potency machine. I think that radiation is still in its infancy and we may expect much from it which will open great avenues of hope for these patients.

Frank R. Girard, San Francisco—This is indeed a question that is still in its infancy and I think it will be many years before it is thoroughly decided. Some men are taking the stand now that carcinoma of the cervix and uterus is never a surgical disease but should always be treated by X-ray or radium. I can not bring myself to take this radical stand. There is always the advanced case, as Dr. Maxwell brought out in the paper, which we are powerless to treat by surgery and which can be made comfortable for the remainder of life by radiation. Carcinoma of the body of the uterus is undoubtedly primarily a surgical disease to be followed by radium later. I think the very early cases of cervical cancer which we occasionally see and which I hope we may see oftener, as people become educated to the importance of consulting their physician on the appearance of early symptoms, will be followed by a larger proportion of cures if the radical operation is combined with radiation. I would feel safer treating these cases by surgical methods plus radiation rather than by radiation alone.

James Percy, San Diego—There are so many sides to this question that I have been lying dormant in reference to the cautery. I have been watching my cases and I am interested in the statement that was made in the paper about cauterization having been abandoned. The cautery has never been mentioned in the literature more frequently than at the present time. You can't down the cautery in cancer. It is the only thing that survived with the human race and is still the most certain treatment for cancer that we have. The only thing is that we think of the cautery as a red-hot, white-heat instrument of torture. That day will soon be gone. There is nothing that the cancer cell succumbs to so quickly as heat. Just 113° F. for ten minutes and you cannot transplant any cancer cells. Now it is a mere question of dissemination. It is curious to me that gynecologists have forgotten the work of John Byrne who deplored the use of the knife.

Jones, Long Beach—With regard to the surgery, Dr. Crile says, "Handle the tissues lovingly," and I am very much afraid at times that we do not get results from surgery sometimes because we do not handle the tissues lovingly enough. Personally, I have used, in the last six or seven years, radium following surgery in quite a number of the so-called non-operable cases. I do believe that if we will be more careful in handling our carcinomatous tissue we will not have as many recurrences.

Margaret Schulze, San Francisco—We believe that our results have been a good deal better with the radium than with the cautery. The comparatively good results in the borderline type of case tends to make us consider operating upon a patient very much more seriously than we might have at an earlier time when we did not have the radium. The borderline case does a great deal better with radium than with operation and so we want to make sure that it is not a very early operable case before we subject the patient to radium. Inoperable cases are much better treated by radium alone.

THE TECHNIQUE AND ORGANIZATION OF THE LOS ANGELES MATERNITY SERVICE*

A MUNICIPAL MATERNITY DISPENSARY

By LYLE G. McNEILE, M. D., Los Angeles

The Maternity Service was organized in 1915 by the Los Angeles City Health Department. The staff consists of the author as supervising obstetrician, assisted by five assistant supervising obstetricians, six resident physicians (or internes), and from two to four medical students. who are called externes.

The assistant supervising obstetricians are appointed from the eligible list of junior attending obstetricians to the Los Angeles County Hospital. They act as consultants to the resident physicians, and supervise all treatment, surgical or otherwise, in pathological cases. The resident physicians must be licentiates in medicine, and must have completed an interneship of not less than twelve months in an approved general hospital. They are appointed for a term of six months, and receive $75 per month, with mileage allowance for the use of their automobiles, and room with bed and laundry.

Externes are third or fourth-year medical students who have completed a course in normal obstetrics in an approved medical school, and are appointed for a two weeks' student service.

A central office is maintained at 118 Normal Hill Center, for the purpose of handling all routine clerical work, records, labor bags, obstetrical supplies and many other matters which are routine in a large dispensary. The office is in actual charge of a clerk-stenographer. Cases are reported to the office on a postcard form, or by telephone in case of emergency. The majority of such reports come from district nurses, charitable organizations, clinics, hospitals and other similar agencies. A relatively large number of calls come from new patients who have heard of the service from "old patients."

Upon receipt of a call, the clerk makes out a blank ante-partum record, which is given to the externe (student), on duty. The externe sees the patient within a few hours, recording the medical and obstetrical history, with the result of his obstetrical examination. The patient is given a copy of a leaflet, "Advice to those who are about to become mothers," which is printed in several languages. She is also given a dispensary card, giving the location of the nearest dispensary, and directions for calling the Maternity Service at the time of labor. She is instructed to come to the Maternity Dispensary at least every two weeks throughout pregnancy, and to bring with her at each visit a specimen of urine for examination. If the patient cannot, or will not go to the dispensary, a resident physician sees her at her home at least every two weeks during pregnancy.

All of the externes' work is checked up by the resident physician in whose district the patient lives. The physician, and not the externe, is held responsible for each case, and is compelled to see the case as often as necessary.

* Read before the Section of Obstetrics and Gynecology of the Medical Society of the State of California at Yosemite National Park, May 16, 1922.

All resident physicians and externes make daily reports in writing, giving all details of residence calls and labors during each twenty-four hour period.

MATERNITY DISPENSARIES

At present the Maternity Service is maintaining two dispensaries for the care of pre-natal and post-partum cases. In pre-natal cases at the first visit the patient is examined, external measurements and blood pressure are taken, and a urinalysis made. In normal cases subsequent visits are made at intervals of two weeks, blood pressure and urinalysis always being insisted upon, and examination made if indicated. Internal measurements are taken in early pregnancies, or if otherwise indicated.

We are able to make a post-partum examination of mother and child in nearly all of our cases. Gynecological cases which are not operative are treated in each dispensary, while operative cases are referred to the County Hospital.

Pre-natal care and post-partum examinations are given to women regardless of whether or not they expect to go to the hospital at the time of labor, or whether they are house patients. In addition we care for a comparatively large number of women who expect to employ a physician but are unable to pay for the services of an obstetrician who will give them adequate pre-natal care.

The dispensaries have had a profound educational effect in this regard, and we have noticed that more and more women are coming to demand adequate pre-natal care, because, as they say, they "have noticed that their friends who have received dispensary care get along better at the time of confinement, and are stronger after the baby comes."

The dispensaries are under the direct supervision of an assistant supervising obstetrician, the resident physicians and externes acting as assistants.

COMMUNICATION BETWEEN PATIENTS, PHYSICIANS AND EXTERNES

Los Angeles is such a large city in area that it is not practical to instruct patients to send to the dispensary at the time of labor, or to require resident physicians to remain at a central point while on call.

Each resident physician and externe reports by telephone to the operator on the telephone exchange maintained by the Los Angeles County Medical Association every hour, unless he can be reached through a telephone number left with the operator. The exact time for reporting is so arranged that we have at least one externe and one resident physician reporting on each even hour, and others reporting at 15, 30 and 45 minutes after the hour. All communication between staff and patients is handled through the exchange, this arrangement enabling us to handle calls with a maximum of fifteen minutes delay.

GENERAL ROUTINE IN HANDLING LABOR CALLS

Upon receipt of a labor call, the operator notifies a resident physician and an externe, who see the patient at once. The preparation, examination and delivery are made under the direct supervision of a resident physician, no student being allowed to assume this responsibility without supervision.

The resident physician, and not the externe, is held responsible for each case, and must see the case at frequent intervals if he leaves after the first examination.

All normal deliveries are cared for in the patient's home, but pathological cases are so far as possible sent to the County hospital and remain on our service in that institution. In cases where home conditions are good, or in which there is great difficulty in persuading the patient to go to the hospital, such operations as low forceps, versions, perineorrhaphies, breech extractions and mild toxemias are handled in the home.

TABLE 1

General Report, Showing Growth of the Service *

	1916†	1917	1918	1919	1920	1921
Applications received	427	529	632	773	1073	1428
Women delivered	263	348	408	495	648	751
Ante-partum house calls	1020	1796	3194	3158	3204	2371
Post-partum house calls	1602	2523	3112	3634	5229	5483
Dispensaries—						
women	756	1604	2042	2047	2556	4093
children	169	353	454	468	336	365

* For fiscal year ended June 30 of the year stated.
† Includes the last ten months of the fiscal year.

STUDENT SERVICE

The student service is two weeks in length. During his first week the student makes from eight to twelve ante-partum and post-partum calls each day, attends the dispensaries, witnesses operative deliveries, and such normal deliveries as are assigned to him.

During his second week he delivered all multiparae under the supervision of the resident physician. From the hour that the student goes on duty, until he leaves, he is under the supervision of a member of the staff. All orders and technique are printed, and are specific. We feel that many of the failures of students are due to lack of specificity in outlining instructions.

RECORDS

All cases are numbered and cross-indexed by name and address. All notations are made at the time the patient is seen, and not entered subsequently from memory.

We have adopted the "Standard Nomenclature of Diseases and Pathological Conditions, Injuries and Poisonings," as issued by the Bureau of the Census, as a guide to nomenclature, and use the code numbers in that volume, with an additional code covering operative procedures, to designate the various obstetrical conditions which are observed.

In order that our results may be available for statistical purposes at any time we have recently adopted, and now have in operation, the modern system of mechanical tabulating and indexing usually known as the Hollerith system. In this system the original records are transferred by means of a machine called the "key punch" to index cards, the record on the card appearing as a series of punched holes representing the code numbers of all data which is desired. Then, by means of a machine called the "sorter" the punched cards can be mechanically sorted at the rate of 250 cards per minute, into any desired arrangement relative to any character or item of information recorded upon the cards. We are using

a modification of the cards described by Pearl in the Johns Hopkins Bulletin, Vol. XXXII, No. 364.

TECHNIQUE DURING LABOR

Upon arriving at a case the resident physician obtains a history of the time when first labor pains were observed, frequency, strength of pains, show, and condition of membranes, thus acquainting himself with the general condition of the patient and the probable rapidity of the labor. If there is apparently ample time for routine care, he then removes coat, rolls up sleeves and dons a short-sleeve non-sterile gown.

After placing a kettle of water on the stove, he now makes a complete physical examination of the patient, including temperature, pulse, blood pressure, auscultation of heart and lungs, abdominal examination to determine presentation and position, the nature of abnormalities, the heart tones of the fetus, and the strength of the uterine contractions. The size of the child is estimated and noted, and the pelvis measured. Pelvimetry is omitted if the patient has received pre-natal care at the dispensary.

The room is now cleared of all unnecessary furniture, and floor covered with clean newspapers, particularly about the bed. A table is cleared off, covered with newspapers, and the contents of the labor bag are removed and placed in a definite order. Since we do all deliveries except breech and operative procedure on the bed, the resident is particularly cautioned to remove all bedding down to the mattress, place three table leaves or their substitutes across the bed between the mattress and springs, protect matress with a thick covering of clean newspapers, replace sheet, Morrison cushion, and slop bucket for drainage.

Before preparing the patient the resident washes his hands for two minutes under running water, working the soap well under finger nails and into all creases, and pares and cleans nails. All patients are closely clipped, and operative cases shaved. With a sterile wash rag the patient is thoroughly scrubbed with green soap and water from the enciform to the knees, giving special care to the genitals. This same area is then washed off with ½ per cent liquor Cresolis Compositus. The patient then dons a clean night gown if possible.

No vaginal examinations are ever made during labor except upon order and in the presence of an attending obstetrician. The only indication for vaginal examination which we recognize is a pathological condition which cannot be diagnosed by rectal examination. Rectal examinations are made as often as necessary to determine the progress of the case. In making rectal examinations our rules specify that the hands must be washed before each examination, one finger only is used, and extreme care taken to avoid touching the genitalia. All examinations are made in the dorsal position, and finger introduced by sight. Gloves must be boiled before each examination, and must not be used for any purpose other than rectal examinations. They must be kept in a separate glove bag, and not allowed to come in contact with vaginal gloves or utensils used for vaginal examinations, or delivery.

Before delivery the local preparation is repeated, gloves, hemostats and scissors are boiled, and placed, with solution of ½ per cent liquor cresolis compositus, on a chair beside the bed. Sterile supplies are furnished in tin containers. A principle of our asepsis is the so-called "limited sterile field." By this we mean that only the field immediately surrounding the vulva is considered sterile, and all else is considered to be contaminated. Each container is filled with four sterile towels, five vulvar pads, cord dressing and sterile cotton. While we do not limit the amount of supplies used on a case, we encourage the staff in preventing contact infection by avoiding vaginal examinations and manipulation during labor and delivery, and in keeping their hands "clean" by avoiding contact with anything except the limited sterile field.

All deliveries are done in the dorsal position. We do not give enemata unless specially indicated, because we feel that the danger of infection through the passage of liquid feces is greater than through the solid fecal matter pressed out of the rectum during the second stage.

Our general principles in the conduct of labor are asepsis and watchful expectancy. Fetal heart tones are taken and recorded every two hours during the first stage and every thirty minutes during the second stage.

During the birth of the child the fundus is controlled by the student, but all manipulation is avoided except for indication. No interference is ever attempted for at least twenty minutes except for hemorrhage, and after twenty minutes only if the placenta has separated. Early expression is then done, and one dram of flx. ergot given. The perineum is now examined for lacerations, cleansed, vulva pad and abdominal binder applied. All lacerations are repaired within twenty-four hours to five days.

The infant is cleansed with Squibb's Mineral Oil or olive oil, cord dressed with gauze saturated with 50 per cent alcohol, binder applied, and dressed. As a prophylactic we have had the best results with 1 per cent silver nitrate furnished in wax ampoules by the State Board of Health. This is not neutralized.

Before leaving the patient the resident must note: 1. Mother's temperature and pulse; 2. That the uterus is firmly contracted; 3. That there is no hemorrhage, either internal or external; 4. That the placenta is complete; 5. That there is no hemorrhage from the baby's umbilicus.

POST-PARTUM CARE

During the puerperium the necessity of asepsis is also forcibly emphasized. Daily visits are made by externes and nurses, at each visit the "toilet of the vulva," oiling and dressing of the baby and general nursing care are given. Bowels are opened on the second morning following delivery with one ounce of castor oil, followed each day by two compound cathartic pills. This amount of catharsis might not be necessary were it not a fact that most of our patients are Mexicans, and require drastic treatment.

Breasts are scrubbed with soap and water once daily, and breast binders advised for support. Distended breasts are treated with firm binder, free catharsis and ice bags. Breast pump is never used.

The infant receives a daily oil rub; cord is dressed after the fifth day with alcohol dressing, and then daily until separated. After separation the nurse touches it up with tincture of iodine daily for two or three days. The baby first nurses eight hours after delivery. For the first forty-eight hours the baby is put to the breast for five minutes, every four hours. After the second day the three-hour interval is followed.

TABLE 2

Cost of the Maternity Service by Fiscal Years

	1917	1918	1919	1920	1921
Equipment	38.50	35.90	293.39	678.28	254.97
Salaries	2100.00	2100.00	3033.35	3478.65	6963.65
Contractural services	220.87	192.02	341.53	445.04	551.42
Supplies	251.22	419.67	622.28	1187.64	2065.25
Total	2610.59	2747.59	4290.55	5789.61	9835.29
Cost per delivery	7.50	6.73	8.67	8.90	13.09
Cost per application	4.93	4.35	5.55	5.39	6.88

END RESULTS

The Service was started on September 1, 1915. Up to and including June 30, 1921, we had delivered 2913 cases.

The maternal mortality for this period was 5, of which 4 died of influenza in 1918, and one died of abruptio placenta in 1920. Our mortality is thus 1 in 582 cases.

The infant mortality for this period was 136, or slightly less than 5 per cent. This includes all stillbirths, and deaths within ten days. It includes all prematures after five lunar months.

H. A. Stephenson, San Francisco—For the past twelve years I have been interested in hospital and outpatient work, especially in obstetrics, and have had the good fortune to review some of the work and be associated with at least three or four supposedly good outpatient clinics and I must say that none of these have quite reached the standard that has been set by Dr. McNeile, and after reviewing his paper very carefully it seems to me that he has an organization that is almost perfect. My experience with outpatient clinics is that there are a good many rough spots in them and it is very difficult, I believe, to follow up a good many of these patients. He seems to have some trouble inasmuch as his applications are about double his number of confinements. Fifty per cent of patients are lost track of, that is about the average in the clinics that I am familiar with. There are four or five things that stand out in this paper all of which ten[illegible] to congratulate Dr. McNeile. The first one is [illegible]is ability to impress the Supervisors of Los An[illegible]eles sufficiently to give him $10,000 a year. That is a little different, I think, from the supervisors of most big cities. It is very difficult to get many of the city fathers interested and when one can get $10,000 a year to take care of clinic and indigent patients, I think one is to be congratulated.

The second is his good fortune in being able to maintain a staff of six well trained assistants and four workable assistants that he can use. When you consider he has two patients a day you can see that it is not a hardship for any of them and yet it is necessary to have at least five or six reliable men to do the work or to see that it is done properly. He is also fortunate, I think, in having associated with the outpatient department the city nursing department. That has been a great drawback in most of the municipal clinics. It has been almost impossible to get nursing care, especially in the West. It is somewhat better in the East, especially in the City of Boston, where the municipal nursing service is very thoroughly organized. The nursing department, I am sure, should receive a great deal of credit for the results that Dr. McNeile reports. Another factor that he has brought out that we have not been fortunate in having in some of the other places is his stirring up or his inciting interest in the laity by having associated with him the Maternity Service Association, because it is only by stimulating the laity that we can bring pressure to bear, I think, on those who have the disposal of the city's funds in hand. He may have another secret; he told me about it privately and I am not at liberty to mention that.

Then the fourth thing that is very striking, I think, is the follow-up system which he has gone over with me in detail. He is able, for example, to pick out his cases of placenta praevia, by going through his cards at the rate of two hundred and fifty a minute and you can realize what an improvement this is over the system that we have used in the past in a great many of these outpatient clinics in which a number is written down on cards and the cards turned by hand. It takes a great deal of time. Lastly, his results, as far as the mothers are concerned, are wonderful. Only one in 583 patients died. That is certainly a wonderful record for outpatient work. All of his very sick patients he takes to the County Hospital because it is affiliated with the outpatient work, and in regard to that, as a rule, the mortality in hospital work is somewhat high. His infant mortality is very close to the average, the average being around 6 or 7 per cent in the recognized clinics over the States, his running about 5 per cent. I congratulate Dr. McNeile on the work that he has done and I would like to ask one question, and that is, Does he use an anaesthetic on these cases and, if so, what kind and who administers it?

A. L. Munger, San Francisco.—Dr. McNeile's record strikes me as being a very unusual one. Having been associated in this sort of work for the past ten years, I am really surprised at the control that he has managed to obtain of his service. His maternal and foetal mortalities, to my notion, speak most definitely of his ability in handling that service. I think he is to be congratulated upon the results he has obtained.

L. A. Emge, San Francisco—It is not the chair's privilege to take part in the discussions, but I feel that it is the duty of the chairman to congratulate Dr. McNeile on his good work. I have nothing else to add to what Dr. Stephenson has said, but I have seen three of the large outpatient clinics where the problem was comparatively easy, but in spite of good-will, no such results were obtained because the control of one mind was absent. It always takes one mind to see such a thing through. I feel that Dr. McNeile's communication should be taken home to all the communities; and supervisors, city fathers, laity and charitable institutions told that such things can be had for very little money, because $10,000 for the City of Los Angeles is little money. If Los Angeles can do it, I think the rest of us in other parts of the State could, for the necessity undoubtedly exists, especially in these days of stress where we cannot have private care for all our patients. I feel strongly that Dr. McNeile's paper should be taken up and sent out broadcast to all municipal institutions of our entire State, and I think you could do him no better honor than to take this home with you and tell it whenever you have a chance, to convince the supervisors of the necessity of establishing something similar.

Lyle G. McNeile, Los Angeles (closing)—I want to thank those who have discussed this paper very much. In connection with the anaesthetic, in operative cases, an anaesthetic is given. We are using Dupont's ether and no other anaesthetic agent. In

operative cases it is given by a student, supervised by the resident physician. In normal deliveries, the last year, particularly in primiparae, we have begun the use of anaesthesia during the last part of the second stage. I am personally very much opposed to conducting any labor without the use of an anaesthetic. I think every woman should be given an anaesthetic at least during the second stage. On the other hand, we have been unfortunate down there in being the center of a group of fanatics. We have not only fanatics, but we have the ignorant Mexicans and a certain class of those people who believe that if a child is born of a woman who does not have pain at the time her child is born, the child is condemned to everlasting hell. We are confronted with it repeatedly, so we have to be very careful about giving an anaesthetic, particularly in some types of patients. We have a few Rush men and Eastern men coming in, and gradually we are increasing the number of cases in which we do use ether.

(1021 Pacific Mutual Bldg.)

REPORT OF A CASE OF YAWS IN CALIFORNIA

By HARRY E. ALDERSON, M. D., HARRY C. COE, M. D.
(From the Skin Clinic Stanford University Medical School, San Francisco)

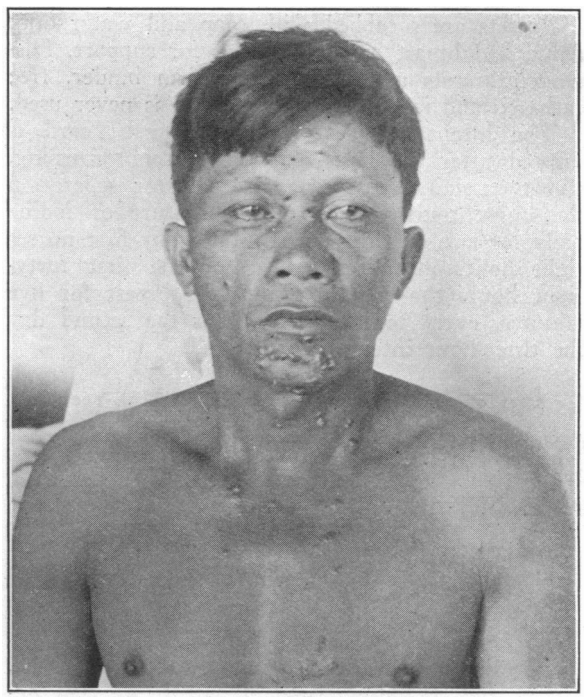
The recent appearance of a well-marked case of yaws in the skin clinic caused us to circularize the profession of the State to find out whether other cases had ever been recognized in California. We sent a comprehensive questionnaire to the dermatologists and all of the health officers of the State. It was also published in the State Board of Health Bulletin.

All replies were in the negative, so we consider that this is the first case diagnosed in California. On account of immigration from Central and South America, and the Orient, it is surprising that the disease has not appeared here. It may be, of course, that on account of its resemblance to syphilis, and the rapid subsidence of the lesions after arsphenamin injections, cases have been missed. Possibly increased watchfulness may result in the detection of more cases in the future.

Patient's Record—The patient, a Filipino, male, twenty-seven years of age, presented verrucous and pustular lesions fairly thickly scattered over his face, neck, chest, and lower limbs, some of which are shown in the photographs. He was fireman on a steamer and formerly was in the United States Navy. Prior to one and a half years ago he had always lived in the Philippines, and his health always had been excellent. There was no evidence of past lues.

In August, 1922, he left for England as cook's helper on a steamer. On his arrival in England he had an eruption on his head and face only, which spread rapidly and to him looked like smallpox. Soon it spread to his trunk and then to his legs. He did not feel ill and continued with his work. Some of the lesions healed, although he had no treatment, and left pigmented scars. Some of the lesions across his shoulders grew large and developed into very painful abscesses.

Our examination showed him to be a muscular and well-nourished young man. He presented small wart-like papular lesions surmounted by yellowish crusts, some of which were grouped, on his face, neck, scalp, upper chest anteriorly and posteriorly, lumbar region, thighs, and legs. Across the shoulders there were several walnut-sized abscesses resembling gummata. They were quite painful. There were also numerous pigmented, slightly depressed scars scattered all over the body. The patient stated that they were produced by earlier lesions of the disease which healed without treatment. He could not state where the initial lesion appeared, but said that he first noticed a group of them on his face. The Filipino ship's cook, with whom he worked, had many lesions that closely resembled our patient's yaws eruption. We believe that this was the probable source of infection.



Yaws Case. Note scattered small verrucous lesions.

There were no scars on the genitalia, and he said that there had not been any lesions there. There was general adenopathy. The blood Wassermann was triple plus (with the cholesterinized beef heart, alcoholic extract and acetone insoluble antigens) in both the water bath and ice-box. Pus from one of the small crusted warty lesions on his neck, examined with the dark field microscope, showed an enormous number of the *spirochaetae pertenuis.*

He was given at once neoarsphenamin (0.6) and three days later 0, 9 of the same, and in a week a repetition of the dose. There was no reaction and after the first injection the lesions *rapidly subsided.* He was given no other medication. The last time he called he was apparently well. He did not return for further physical and laboratory examinations, as promised, but we received a letter from him two weeks later, stating that he was perfectly well and looking for work in the country. Follow-up letters sent by our social service department were returned undelivered, so it is assumed that he had gone to work.

The photographs were kindly taken by Pro-